REMARKS

Reconsideration of this application is requested. The claims presented for reconsideration are original claims 25-38. All previously presented claims have been canceled.

I. Claim Rejections – 35 USC § 112

Claims 1-24 and 39-58 were rejected under 35 U.S.C. § 112, second paragraph, for being indefinite. Those claims have now been canceled, rendering this rejection moot.

II. Claim Rejections – 35 USC § 102

Claims 1-16, 18-21, 24, 39-51, 53-56, and 59-75 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2004/0254416. Since each of those claims has been canceled by way of this amendment, this rejection is moot.

III. Claim Rejections – 35 USC § 103

Claims 1, 10, 14-17, 18, 20, and 22-75 were rejected under 35 U.S.C. § 103(a) as being unpatenable over U.S. Patent No. 4,861,938 (Lewis) in view of U.S. Patent No. 4,310,440 (Wilson) in further view of U.S. Patent No. 6,488,741 (Olson) and U.S. Patent No. 6,403,854 (Miller). Only original claims 25-38 remain in this application, and this rejection is traversed.

This invention is directed to processes for separating methanol, ethanol and/or dimethyl ether from a hydrocarbon stream. In one preferred embodiment of the invention, a hydrocarbon stream containing propylene, propane, and dimethyl ether is produced by contacting an oxygenate feed stream with a molecular sieve catalyst to convert the oxygenate to the hydrocarbon stream. A majority of the propane in the hydrocarbon is separated from the propylene, with much of the dimethyl ether remaining with the propane. The dimethyl ether is then adsorbed from the propane- and dimethyl ether-containing stream using a crystalline microporous material that preferentially adsorbs dimethyl ether over propane. The resulting stream is a stream having a high concentration of propane and little to no dimethyl ether.

Lewis discloses a process for converting a non-olefin feedstock to a light olefin product using a crystalline microporous three dimensional solid catalyst. During the conversion process, the catalyst becomes deactivated and must be at least partially regenerated. Lewis uses a conditioning agent comprising a basic material that is substantially incapable of entering the pores of the catalyst to aid in the regeneration process. Lewis differs from the claimed invention in that Lewis fails to describe any separation of desirable end products, much less any type of adsorption process to remove dimethyl ether from a hydrocarbon stream.

Wilson discloses various crystalline, microporous aluminophosphate compositions that can be used as adsorbents. The disclosed adsorbents are preferential in removing water over hydrocarbon molecules. See column 46, lines 37-42. Thus, Wilson is of little relevance to the concept of separating dimethyl ether from propane.

Olson discloses adsorbents that are useful for separating propane from propylene. Olson does not disclose the manufacture of olefins from an oxygenate feed, nor does Olson disclose separating propane from propylene and then adsorbing dimethyl ether from the propane.

Miller discloses a process from producing light olefins from an oxygenate feedstream. Included in that process is a sequence for separating propane and propylene from the light olefin stream. See, in particular, Fig. 4.

According to the separation aspect of the Miller process, water is removed from the product vapor stream using a quench tower (206) and a separator (210). The vapor product is then compressed in a compression unit (216), oxygenate adsorbed in an oxygenate removal zone (218), caustic washed (220) and dried in a dryer zone (222). After this series of compressing, adsorbing, caustic washing and drying, the component streams (e.g., ethylene, propane, and propylene) are separated by distillation (224, 228 and 230).

Miller differs from the claimed invention in that Miller adsorbs oxygenate from the entire hydrocarbon product stream prior to separating the propane and propylene into component streams. This is essentially the opposite of the claimed process. Thus, Miller essentially teaches away from applicants' invention.

Not one of the cited references, nor any combination of the cited references, suggests separating a propane component from a propylene component of a hydrocarbon stream in a manner such that dimethyl ether in the hydrocarbon stream substantially remains with the propane. Nor does any one or any combination of the cited references suggest adsorbing dimethyl ether from the separated propane stream using a crystalline microporous material that preferentially adsorbs dimethyl ether over propane. Therefore, no single reference nor any combination of references cited in the office action suggests applicants' claimed invention.

IV. Conclusion

Having demonstrated that the cited references fail to disclose or suggest the invention as claimed, and that all other remaining rejections of claims have been adequately addressed, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2003B091).

Respectfully submitted,

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Frank Reid
Attorney for Applicants
Registration No. 37,918

ExxonMobil Chemical Co.
Law Technology Department
P.O. Box 2149
Baytown, Texas 77522-2149
Phone: 281-834-1743 (Direct)
Fax: 281-834-2495
frank.e.reid@exxonmobil.com